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TOFLU, L

GIDEON GIMLAN
SKJERVEN, MORRILL, MACPHERSON,
FRANKLIN & FRIEL
25 METRO DR., STE. 700
SAN JOSE, CA 95110

EXAMINER

2307

ART UNIT	PAPER NUMBER
	03/30/92

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DATE MAILED:

This is a communication from the examiner in charge of your application.
COMMISSIONER OF PATENTS AND TRADEMARKS

☑ This application has been examined   ☐ Responsive to communication filed on _____   ☐ This action is made final.

A shortened statutory period for response to this action is set to expire — 3 — (three) month(s), — 0 — days from the date of this letter.
Failure to respond within the period for response will cause the application to become abandoned.   35 U.S.C. 133

Part I   THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:

1. ☑ Notice of References Cited by Examiner, PTO-892.   2. ☑ Notice re Patent Drawing, PTO-948.
3. ☐ Notice of Art Cited by Applicant, PTO-1449.   4. ☐ Notice of Informal Patent Application, Form PTO-152.
5. ☐ Information on How to Effect Drawing Changes, PTO-1474.   6. ☐ _____

Part II   SUMMARY OF ACTION

1. ☑ Claims _____ 1-22 _____ are pending in the application.

   Of the above, claims _____ are withdrawn from consideration.

2. ☐ Claims _____ have been cancelled.

3. ☐ Claims _____ are allowed.

4. ☑ Claims _____ 1-22 _____ are rejected.

5. ☐ Claims _____ are objected to.

6. ☐ Claims _____ are subject to restriction or election requirement.

7. ☑ This application has been filed with informal drawings under 37 C.F.R. 1.85 which are acceptable for examination purposes.

8. ☐ Formal drawings are required in response to this Office action.

9. ☐ The corrected or substitute drawings have been received on _____ . Under 37 C.F.R. 1.84 these drawings
   are ☐ acceptable. ☐ not acceptable (see explanation or Notice re Patent Drawing, PTO-948).

10. ☐ The proposed additional or substitute sheet(s) of drawings, filed on _____ has (have) been ☐ approved by the
    examiner. ☐ disapproved by the examiner (see explanation).

11. ☐ The proposed drawing correction, filed on _____, has been ☐ approved. ☐ disapproved (see explanation).

12. ☐ Acknowledgment is made of the claim for priority under U.S.C. 119. The certified copy has ☐ been received ☐ not been received
    ☐ been filed in parent application, serial no. _____ ; filed on _____.

13. ☐ Since this application appears to be in condition for allowance except for formal matters, prosecution as to the merits is closed in
    accordance with the practice under Ex parte Quayle, 1935 C.D. 11; 453 O.G. 213.

14. ☐ Other

<div align="center">EXAMINER'S ACTION</div>

TOL-326 (Rev. 9-89)

1.   Drawings are objected to because of the reasons stated by
the draftsman on form 948. Correction is required.

2.   This application has been filed with informal drawings which
are acceptable for examination purposes only. Formal drawings
will be required when the application is allowed.

3.   The prior art made of record and not relied upon is
considered pertinent to applicant's disclosure.

4.   The disclosure is objected to because of the following
informalities: in claim 13 part b2 "data representative of each
class" should be deleted. Claim 14, second line from the bottom
"instant" should be "instance". On page 42 line 4 from the bottom
and on page 43 line 14 "inventnion" should be "invention". Insert
space between "application" and "program" in "applicationprogram"
on page 55 line 1.Appropriate correction is required.

5.   35 U.S.C. § 101 reads as follows:
     "Whoever invents or discovers any new and useful process,
     machine, manufacture, or composition of matter or any new
     and useful improvement thereof, may obtain a patent
     therefore, subject to the conditions and requirements of
     this title".

Claims 14-20 and 22 rejected under 35 U.S.C. § 101 because
they are directed to non-statutory subject matter.

An invention may be patented only if it falls within one of the
four statutory classes of subject matter of 35 U.S.C. 101. Any
process, machine, manufacture, or composition of matter
constitutes statutory subject matter unless it falls within a

judicially determined exception of section 101. The claims are

directed to non-statutory subject matter because the claimed

subject matter:

(A) does not fall within any of the four statutory classes of 35

U.S.C. 101.; and/or

(B) falls, by analogy, within the printed matter exception to 101

or within a new exception to computer programs per se.

 (A) In order to determine if the claimed invention falls within

any of the four statutory classes, one must determine if the mere

labeling by the preamble is sufficient to allow the claim to pass

muster. The applicant has attempted to categorize his invention

into one of the statutory classes by merely labeling the

invention in the preamble as computerized database system.

However, it is clear that the body of the claim is directed to

computer code and not directed to a computer implemented process

or apparatus since no computer is claimed. The claims are not

directed to a computer implemented process, i.e. to a series of

steps performed by a computer, which processes were held by the

CCPA to constitute statutory subject matter unless within a

judicially determined exception to 101. What is usually at issue

is not the program i.e., the software, but the process steps that

the software directs the computer to perform. Instead, the claims

are directed to a computer program which may or may not be

associated with structure.

Non-statutory subject matter cannot be automatically converted into statutory subject matter merely by broadly labeling the claim as a computerized system or by drafting the claims with token references to something that is statutory subject matter; this form of draftsmanship would amount to elevating form over substance.

The limitations in the preamble generally are not entitled to patentable weight. Generally the preamble does not limit the claims. The potential for misconstruction of preamble language requires that compelling reason exist before that language may be given any weight. Here, the bodies of claims do not refer to or modify any structure. A parallel may be drawn to the inquiry used in determining whether a claim having a mathematical algorithm is directed to non-statutory subject matter or to a statutory process. The goal is to answer the question "What did applicants invent?" Here, the invention sought to be patented is really the computer program itself.

(B) This leads to the second determination which is whether the computer program is considered to be statutory subject matter. The courts have uniformly denied patentability of claims directed toward mere descriptions of printed matter fixed in a tangible medium. In each case, applicant had to demonstrate that the claim defined a combination which itself provided new functional results. Applicant's claims do not demonstrate this new

functional relationship.

Program code means on a computer usable medium, separate from the computer, is merely a blueprint of abstract ideas in code form UNTIL interpreted by the computer. Blueprints, a form of printed matter, are not patentable - they are merely guidance from which a patentable device may be developed when the information from the blueprint is taken from the blueprint and implemented. Analogies can be drawn from other non-statutory subject matter. For example, abstract ideas have always been held non-statutory. A claim directed toward the abstract idea of polygon filling would be non-statutory, even though the abstract idea is used in implementing the statutory polygon filling process or apparatus.

To merely describe the abstract idea in terms of patterns on a medium which could be used and interpreted by a computer should not save the claim.

By analogy, printed matter in a statutory process or apparatus should not be considered statutory separate from the process or apparatus.

6.   Claims 1-22 rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, the preamble recites a processing system for

analyzing relations but what is in the body of the claim is data

storing means and associating means. The structure recited in the

claim would not perform analysis of relations. The function of

"associating means" is vague since it is not clear what kind of

an association it performs. "Each recorded entity-instance datum"

has no antecedent because the claim never recites anything which

has been recorded although there's a means for recording. "All

entity-type instance data associated....defining datum" has no

antecedent basis. "Where recording is performed ....layout" is

functional unsupported by the apparatus in claim 1. It is not

clear how only storage means and tables will analyze data.

In claim 2, "according to" does not define a structure. "A

relative table organization", "a unique row" and "an entity

definition table" are inferentially stated. "Each entity type

defining datum" has no antecedent basis; claim 1 recites means

for recording entity type defining data. "Addressable" is vague

in that it does not provide the structure which makes it

addressable. "Relative" is ambiguous in that it does not show how

it is relative. The recording means in claim 1 refer to recording

information whereas in claim 2 the applicant states that the

recording means include a table. It is not clear how a table

contributes to the function of recording information. If the

recording means was referring to storage, claim 1 already recited

data storing means.

In claim 3 "association enforcing means" is vague and ambiguous.
What kind of an association is it? One would presume an
association enforcing means would enforce an association rather
than prevent a recording. "The instance-storing table" has no
clear antecedent basis since claim 1 indirectly incorporates an
instance storing table. There is no reason to believe that there
may be a pre-existing entity-type defining datum. The claim does
not indicate the course of action if the entity-instance datum is
associated with an entity-type defining datum.

In claims 4,7 "without system recompilation" and "without
requiring recompilation" are statements of desired results not
supported by the claims. The invention or the claims are not
directed to compiling programs. Also, it is not clear why the
applicant states twice that the system does not require system
recompilation. "The life of the system" has no antecedent basis.
How can "a system" be recompiled? What is a table expansion
means? It appears the applicant is trying to say that additional
entries may be added to the table but it seems unlikely that the
claims are referring to a structure.

In claim 5, it is not clear what is "common" referring to. Common
to what? "The group" has no antecedent basis. "Entity-types
selected" is not clear since it does not show who or what
selected it. Are there any other groups?

In claim 6 one would presume a relationship enforcing means would

enforce a relationship rather than prevent a recording. "The
relation-instance datum" has no clear antecedent basis. It
appears if the relation-instance datum is associated with a
relation-type defining datum the means is of no use.
"Prespecified" does not particularly indicate who or what
specified them or how this information is available.

In claim 8, it is not clear what kind of a match the applicant is
referring to. Who or what specified the "prespecified ones of the
relationship-instance data" or where can this information be
found? "The set of defined allowed relationships" has no
antecedent basis. "Allowing inquiries to be formulated" is
desired results. The following claims do not show an inquiry
being formulated. The connection between generating linkages and
formulating inquiries is not clear in the claim.

In claim 9, "predetermined subset" is vague and ambiguous.
Attaching individual access-control parameters would not be the
function of an access-control means although it may be the
function of some information adding means. "Thereby limit said
inquiring paths....their own access security" is a statement of
desired results since no structure which can provide access
security is recited. What is the relationship between attaching
access-control parameters and individual access security?

In claim 10, "associated with" does not describe the relationship
between the tables and entity types. "Predefined set of data" is

ambiguous since it is not clear who predefined them, how it has
been predefined and/or where these definitions may be found. "So
that meaningful interpretation of these two sets of tables are
provided" is functional and vague. Meaningful to what or who?
Claim 10 is a single means claim since the only means recited is
a memory unit. The tables and schema defining means refer to what
is stored in memory rather than a structure.

In claim 11, what does "logically linked" mean in terms of
structure? What is "opposed" referring to? "Opposing" is not
clearly identified in the claims and is confusing. The meaning of
"operatively coupled" is not clear. "According to" does not
particularly indicate the function of the means. "A search
algorithm based on one or two of the first through third data" is
vague. "The identity" has no antecedent basis. "Opposed two or
one" what? As best understood, the only structure in the claim is
a memory. Part b) is hard to comprehend, i.e. second data is
opposed to the first data but the third data is opposed to both
of them and identifies one or more relations. It is not clear how
one or more relations fit in with opposing data.

In claim 12, "an entity class associated with the Ei table" is
inferential and does not point out what kind of classes or
association. "Opposed to such entity class data" is not clear.

In claim 13, "the first and second entity instances","the
distinct relations", "the corresponding relation class" have no

antecedent basis. Also, what is corresponding? "For associating"

does not particularly point out for what.

In claims 12 and 13 "all instances" is indefinite.

In claim 14, " a first entity class" is inferentially stated. In

the fifth step the claim refers to only a single relationship

whereas the preamble recites a method for defining a plurality of

relations. The steps recited are not the steps of a machine

implemented process. The structure associated with the steps is

not given. It is not clear what kind of a relationship

"belonging" refers to.

In claim 15, "According to" is ambiguous. The word "navigation"

appears to be not appropriate for describing the method. "Which

detaches relationship navigation from function specific

programming code" is functional. It is not clear who or what is

performing the steps of the method. The preamble of the claim

states a method for database navigation whereas the steps of the

claim would not perform such a task. The steps of formulating and

saving is not a method for database navigation. Also, the method

comprises disjointed steps. There is no structural or logical

connection between the steps of formulating and saving.

"External" does not particularly point out which. "The path

descriptions" has no antecedent basis. "Pre-defined

relationships" does not show who or what defined them or where

they may be located. How does database navigation adhere to a set

of pre-defined allowed relationships? Which relationships are the

allowed relationships? "The data storing means" has no antecedent

basis. "The saved path descriptions" has no antecedent basis.

"May be " is indefinite. "Subsequently selected" by who?

"Automatic execution" is a statement of desired results

unsupported by the steps of the method. Also, is claim 15 an

independent claim or a dependent claim? It refers to claims 1,2,3

or 6 which are apparatus claims.

In claim 16, the steps of a process need to recite steps of

action. In the claim, steps of action are not observed. What

interprets the path descriptions?

Claims 16-20 show the same defect as claim 15 in that they depend

on claims 1,2,3 or 6 which are apparatus claims.

In claim 17, there were no plural paths defining relational

connections between sets of entity-instances at the beginning of

the plural paths. "The ends of plural paths", "the navigational

path restrictions" and "the original version stored" have no

antecedent basis. "Each individual path execution" has no basis

since the claims do not show any structure which can execute

and/or any execution. "Obeyed" or "interpreted" is not clear

since they do not recite an action. "Multiple times" is

indefinite in that it does not set any limits to the number of

times.

In claim 18, "the InqDef table" and "the data storage device"

have no antecedent basis. "Alterable" and "may be altered" are vague and ambiguous.

In claim 19, "the new navigational description" has no antecedent basis. "Subsequent executions" is ambiguous since there are no subsequent executions recited. "Without need for re-programming" is not clear since there were no programming steps in the previous claims.

In claim 20, What provides access-security? The claim has no support. Also, what is allowing? "To be attached to separate menus" has no support in the claims since there were no menus ever mentioned and claims 21 or 22 do not depend on claim 20 and/or do not show a menu. Claim 15 recites a method for navigation whereas claim 20 refers to the data processing method of claim 15.

In claim 21, the claim recites a "path to be followed" but never refers to it again. How can a table define anything? The action of defining may be performed by a human. Is claim 21 an independent claim or a dependent claim? What is "according to" referring to?

In claim 22, the step of recording fifth data defining an allowed relationship type appears to be an extraneous step. The claim doesn't show the allowed relationship type being used for anything. It is not clear what the difference between "defining" and "expressly defining" is.

7.   Claims 2 and 11 rejected under 35 USC 112 sixth paragraph

being in improper means + function form, i.e. only a single

function is allowed. For example, in claim 2, recording and

retrieving recites two functions.

8.   Claims 2,5,6,12 and 18-21 rejected under 35 U.S.C. § 112,

fourth paragraph, as being of improper dependent form for failing

to further limit the subject matter of a previous claim.

Claim 6 depends on claim 10 which is not a previous claim.

Claim 12 recites what is stored in memory rather than a

structure.

Claims 18 and 19 do not further restrict the method of the claims

they depend on. There is no step of action recited.

Claim 20 does not show a step of action. Allowing path

descriptions to have their own access security would not be a

step of a process.

Claim 21 does not further the apparatus of claims 1,2,3 or 6

since it recites information stored in memory.

9.   The following is a quotation of 35 U.S.C. § 103 which forms
the basis for all obviousness rejections set forth in this Office
action:

> A patent may not be obtained though the invention is not
> identically disclosed or described as set forth in section
> 102 of this title, if the differences between the subject
> matter sought to be patented and the prior art are such that
> the subject matter as a whole would have been obvious at the
> time the invention was made to a person having ordinary
> skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which
> the invention was made.

Subject matter developed by another person, which qualifies
as prior art only under subsection (f) or (g) of section 102
of this title, shall not preclude patentability under this
section where the subject matter and the claimed invention
were, at the time the invention was made, owned by the same
person or subject to an obligation of assignment to the same
person.

Claims 1-22 rejected under 35 U.S.C. § 103 as being

unpatentable over Shimaoka et al.

As to claim 1, in Shimaoka et al's invention data elements are

managed by item information records each comprising a name of the

data element, an item code corresponding to an item in which the

element belongs and a serial number. The relation between item

records is managed by a relation information record expressed by

a source item ID, an object item ID, an item code and a relation

ID indicating the relation between the source and the object

items (abstract). An item in Shimaoka et al is the equivalent of

entity type in the claimed invention, item information file means

is the means for recording the individual instances and an item

index is the instance/type associating means. Shimaoka et al does

not show storing all data elements associated with a specific

item in a single table however the item of each element is

identified in a separate field in the record. Shimaoka et al

clearly teaches separating the record by type or class. For one

of ordinary skill in the art it would be obvious that the

specifics of the separation is not particularly relevant to the

operation of the invention and that a physical separation or only

identifying the records belonging to the same class would produce
the same results.

As to claim 2, Shimaoka et al does not show items addressable by
row numbers. All items are referred to by codes. Row numbers or
codes are merely various methods of referring to a specific
entity and they perform the same function. One of ordinary skill
in the art would be free to select the method of identifying an
item.

As to claim 3, on column 4 lines 3-5 it states that when a
currently processed data element is registered as a part of a
database, an item to which the data element should belong is
specified.

As to claims 4, although in Shimaoka et al items are
predetermined the described embodiment is for illustrative
purposes. One of ordinary skill in the art would be motivated to
increase the size of the items since it is desirable to provide
relationships among as many items as possible.

As to claim 5, the specific information stored in memory cannot
be given any weight since the claim is an apparatus claim and the
information is not necessary for the operation of the apparatus.

As to claim 6, the system of Shimaoka et al indicates an error if
a relationship cannot be specified (Figure 8 S18).

For claim 7, Shimaoka et al shows a limited number of relation
ID's. However, one of ordinary skill in the art would see that

what the relation ID's stand for or the number of IDs is not a
limiting factor for the invention to operate. Therefore, it would
be obvious to one of ordinary skill in the art that the relation
IDs may be expanded and entered at any time.

As to claim 8, on column 9 lines 9-11, Shimaoka et al states that
although the invention is directed to two-dimensional relating,
it can be applied to relate other dimensions. The path of the
claimed invention is nothing more than the extension of Shimaoka
et al's invention as suggested. Therefore, it would be obvious to
one of ordinary skill in the art to define various relationships
in a path among multiple pieces of items.

As to claims 9 and 20, attaching parameters to a record in order
to identify it is well-known art. The claims do not show any kind
of access-control mechanism therefore the examiner cannot apply
prior art.

For claim 10, Shimaoka et al shows means for storing data
elements where each element belongs to an item. Relation
instances are stored in relation information records. Source
items are linked to object items by a specific relation. Shimaoka
et al does not expressly state storing the definition of types in
a table. What appears to be relevant is not that the information
is in a table but that it is stored and available. It is well-
known to store information in a table and hence it would be
obvious to one of ordinary skill in the art.

For claim 11, in Shimaoka et al as mentioned above data elements are associated with items. The relation table shows the relationships between the data elements. Shimaoka et al also states that multiple dimensions of relating is possible. Therefore, the source data element and the object data element can be related by multiple relations and the elements or relationships may be identified.

For claim 12, items information file means for storing a plurality of item information records is shown on column 1 lines 44-46. An item code clearly identifies the class of the data element. As above, the particulars of classifying the data would not be relevant to the invention.

For claim 13, relation information file means for storing a plurality of relation information records is shown on column 1 lines 51-53. Shimaoka et al does not show storing all instances of a relation class in a table. But, as the number of relationships increase one of ordinary skill in the art would be motivated to group the relations for easy referencing.

For claim 14, claim 3 and fig. 3c of Shimaoka et al shows the format of a relation information record. Each record contains a source data element belonging to a first item, an object data element belonging to a first or second item and a relationship connecting the two elements. It would be obvious to one of ordinary skill in the art that the information about items and

their instances have been recorded at some point in time.

For claim 15, the search processing in Shimaoka et al is

described starting on column 6 line 43. Column 7 line 26 state

that the search conditions are determined. Shimaoka et al does

not show saving the path description but saving queries for

future reference is well-known in the art.

For claims 16-19 although Shimaoka et al does not expressly state

interpreting the path descriptions as data it is seen that the

search conditions need not be included in program source code

since they are referred to like data rather than information

which needs to be declared in advance and compiled with the

program.

As to claim 21, Shimaoka et al clearly states that the invention

may be extended to multi-dimensional relating. Therefore, it

would be obvious to define an inquiry path to be followed.

For claim 22, as for claim 14, claim 3 and fig. 3C of Shimaoka et

al shows the format of a relation information record. Each record

contains a source data element belonging to a first item, an

object data element belonging to a first or second item and a

relationship connecting the two elements. It would be obvious to

one of ordinary skill in the art that the information about items

and their instances have been recorded at some point in time.

Restricting the relation type to certain types cannot be
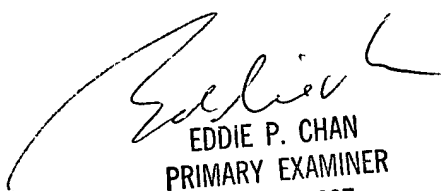
considered a limitation in a patentable sense.

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10.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lucien Toplu whose telephone number is (703) 305-7774.

    Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-1751.

L. Toplu
March 20, 1992

EDDIE P. CHAN
PRIMARY EXAMINER
ART UNIT 237